REMARKS/ARGUMENTS

The O.A. rejected claims 11 through 28 on Kalra. Claims 11 through 28 have been rewritten as new claims 29 through 31 to more particularly define the invention in a patentable manner over the cited prior arts, and any combination thereof. Applicant requests reconsideration of this rejection, as now applicable to claims 29 through 31 for the following reasons:

Claim 29

Satisfying Requirement Of §102

<<Upper Arm, Lower Arm, And Arm Joint>>

Claim 29 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 29 recite the combination of the upper arm, the lower arm, and the arm joint generated by utilizing computer graphics.

Kalra and other cited prior arts, or any combination thereof, merely show the elements of finger and do not show the combination of the upper arm, the lower arm, and the arm joint generated by utilizing computer graphics.

<<1st Length Of Wrinkle Image>>

Claim 29 clearly distinguishes applicant's invention from Kalra and other cited

prior arts, or any combination thereof, since claim 29 recite the 1st length of wrinkle image which indicates the image of the wrinkle of a certain length displayed on or near the arm joint. Here, the 1st length of wrinkle image is displayed on or near the arm joint when the arm joint angle value indicates the 1st value.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the 1st length of wrinkle image displayed on or near the arm joint when the arm joint angle value indicates the 1st value.

<<2nd Length Of Wrinkle Image>>

Claim 29 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 29 recite the 2nd length of wrinkle image which indicates the image of the wrinkle shorter than the 1st length of wrinkle image displayed on or near said arm joint. Here, the 2nd length of wrinkle image is displayed on or near the arm joint when the arm joint angle value indicates the 2nd value.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the 2nd length of wrinkle image displayed on or near the arm joint when the arm joint angle value indicates the 1st value.

<<Different Wrinkle Images In Accordance With Arm Joint Angle Value>>

Claim 29 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 29 recite the method of displaying different wrinkle images in accordance with the arm joint angle value. Namely, when the arm joint angle value indicates the 1st value, the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint, and when the arm joint angle value indicates the 2nd value, the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the method of displaying different wrinkle images in accordance with the arm joint angle value.

Satisfying Requirement Of §103

Kalra and other cited prior arts, or any combination thereof, disclose the wrinke image described on finger joint, whereas the present invention implements the method of describing wrinkle on arm joint in a realistic manner.

<<Tennis Player's Realistic Arm Movement Expressing Effect>>

Claim 29 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a tennis player.

For example, when the computer generated tennis player is waiting for the ball to be served, the computer generated tennis player slightly bends his/her arm holding the tennis racket. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated tennis player is holding the tennis racket wth his/her arm bent as if a real tennis player is holding a tennis racket with his/her arm bent in a real world.

When the ball is served and the computer generated tennis player is about to swing the tennis racket to hit the ball, the computer generated tennis player is in the motion to stretch his/her arm holding the tennis racket. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated tennis player is stretching his/her arm to hit the ball as if a real tennis player is stretching his/her arm to hit the ball in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated tennis player is efficiently described in a realistic manner (hereinafter "Tennis Player's Realistic Arm Movement Expressing Effect"). Kalra and other

cited prior arts, or any combination thereof do not teach the Tennis Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Boxing Player's Realistic Arm Movement Expressing Effect>>

Claim 29 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a boxing player. For example, when the computer generated boxing player is in his/her home position, the computer generated boxing player bends his/her arm to protect him/herself. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated boxing player bends his/her arm to protect him/herself as if a real boxing player bends his/her arm to protect him/herself in a real world.

When the computer generated boxing player counter attacks the opponent, the computer generated boxing player is in the motion to stretch his/her arm to hit the opponent. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives

that the computer generated boxing player is in the motion to stretch his/her arm to hit the opponent as if a real boxing player is in the motion to stretch his/her arm to hit the opponent in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated boxing player is efficiently described in a realistic manner (hereinafter "Boxing Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof do not teach the Boxing Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Karate Player's Realistic Arm Movement Expressing Effect>>

Claim 29 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a karate player. For example, when the computer generated karate player is in his/her home position, the computer generated karate player bends his/her arm to protect him/herself. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated karate player bends his/her arm to protect him/herself as if a real karate player bends his/her arm to protect him/herself in a real world.

When the computer generated karate player counter attacks the opponent, the computer generated karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop as if a real karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated karate player is efficiently described in a realistic manner (hereinafter "Karate Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof do not teach the Karate Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Basket Ball Player's Realistic Arm Movement Expressing Effect>>

Claim 29 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a basket ball player. For example, when the computer generated basket ball player is about to shoot the ball, the computer generated basket ball player bends his/her arm

holding the ball. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated basket ball player bends his/her arm holding the ball as if a real basket ball player bends his/her arm holding the ball in a real world.

When the computer generated basket ball player shoots the ball, the computer generated basket ball player is in the motion to stretch his/her arm to release the ball toward the basket. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated basket ball player is in the motion to stretch his/her arm to release the ball toward the basket as if a real basket ball player is in the motion to stretch his/her arm to release the ball toward the basket in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated basket ball player is efficiently described in a realistic manner (hereinafter "Basket Ball Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof do not teach the Basket Ball Player's Realistic Arm Movement Expressing Effect, therefore, the

present claim is unobvious and patentable under §103.

<<Rifle Shooter's Realistic Arm Movement Expressing Effect>>

Claim 29 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a rifle shooter. For example, when the computer generated rifle shooter is holding the rifle to shoot a target, the computer generated rifle shooter bends his/her arm holding the rifle. At this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated rifle shooter bends his/her arm holding the rifle as if a real rifle shooter bends his/her arm holding the rifle in a real world.

When the computer generated rifle shooter pulls the trigger of the rifle, the arm of the computer generated rifle shooter is further bent due to the reaction (recoil) of the rifle. During this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle longer than the 2nd length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the arm of the computer generated rifle shooter is further bent due to the reaction (recoil) of the rifle as if the arm of a real rifle shooter is further bent due to the reaction (recoil)

of the rifle in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated rifle shooter is efficiently described in a realistic manner (hereinafter "Rifle Shooter's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof do not teach the Rifle Shooter's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Driver's Realistic Arm Movement Expressing Effect>>

Claim 29 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a driver of an automobile. For example, when the computer generated driver drives the automobile straight ahead, the computer generated driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel as if a real driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel in a real world.

When the computer generated driver turns the direction of the automobile, the arm of the computer generated driver is stretched while rotating the steering wheel. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the arm of the computer generated driver is stretched while rotating the steering wheel as if the arm of a real driver is stretched while rotating the steering wheel in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated driver is efficiently described in a realistic manner (hereinafter "Driver's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof do not teach the Driver's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Object Picking Up Realistic Arm Movement Expressing Effect>>

Claim 29 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a human being picking up an object. Assuming that the computer generated human being placing his/her arm on his/her lap reaches out his/her arm to pick up an object

(e.g., a coffee cup). When the arm of the computer generated human being is placed on his/her lap, the arm of the computer generated human being is bent. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the arm of the computer generated human being is placed on his/her lap as if the arm of a real human being is placed on his/her lap in a real world.

When the computer generated human being is in the motion to pick up the object (e.g., a coffee cup), the arm of the computer generated human being is stretched. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint. Since the wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the arm of the computer generated human being is stretched to pick up the object (e.g., a coffee cup) as if the arm of a real human being is stretched to pick up the object (e.g., a coffee cup) in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated human being is efficiently described in a realistic manner (hereinafter "Object Picking Up Realistic Arm Movement Expressing Effect"). Kalra and other

cited prior arts, or any combination thereof do not teach the Object Picking Up Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

Claim 30

Satisfying Requirement Of §102

<<Upper Arm, Lower Arm, And Arm Joint>>

Claim 30 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 30 recite the combination of the upper arm, the lower arm, and the arm joint generated by utilizing computer graphics.

Kalra and other cited prior arts, or any combination thereof, merely show the elements of finger and do not show the combination of the upper arm, the lower arm, and the arm joint generated by utilizing computer graphics.

<<1st Amount Of Wrinkle Image>>

Claim 30 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 30 recite the 1st amount of wrinkle image displayed on or near the arm joint. Here, the 1st amount of wrinkle image is displayed on or near the arm joint when the arm joint angle value indicates the 1st value.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the 1st amount of wrinkle image displayed on or near the arm joint when the arm joint angle value indicates the 1st value.

<<2nd Amount Of Wrinkle Image>>

Claim 30 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 30 recite the 2nd amount of wrinkle image displayed on or near the arm joint. Here, the 2nd amount of wrinkle image is displayed on or near the arm joint when the arm joint angle value indicates the 2nd value.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the 2nd amount of wrinkle image displayed on or near the arm joint when the arm joint angle value indicates the 2nd value.

<<Different Amount Wrinkle Images In Accordance With Arm Joint Angle Value>>

Claim 30 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 30 recite the method of displaying different amount of wrinkle images in accordance with the arm joint angle value. Namely, when the arm joint angle value indicates the 1st value, the

1st amount of wrinkle image (e.g., 3 wrinkles) is displayed on or near the arm joint, and when the arm joint angle value indicates the 2nd value, the 2nd amount of wrinkle image (e.g., 2 wrinkles) is displayed on or near the arm joint.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the method of displaying different amount of wrinkle images in accordance with the arm joint angle value.

Satisfying Requirement Of §103

Kalra and other cited prior arts, or any combination thereof, disclose the wrinke image described on finger joint, whereas the present invention implements the method of describing wrinkle on arm joint in a realistic manner.

<<Tennis Player's Realistic Arm Movement Expressing Effect>>

Claim 30 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a tennis player. For example, when the computer generated tennis player is waiting for the ball to be served, the computer generated tennis player slightly bends his/her arm holding the tennis racket. At this moment, the arm joint angle value indicates the 1st value, and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated tennis player is holding the tennis racket

wth his/her arm bent as if a real tennis player is holding a tennis racket with his/her arm bent in a real world.

When the ball is served and the computer generated tennis player is about to swing the tennis racket to hit the ball, the computer generated tennis player is in the motion to stretch his/her arm holding the tennis racket. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated tennis player is stretching his/her arm to hit the ball as if a real tennis player is stretching his/her arm to hit the ball in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated tennis player is efficiently described in a realistic manner (hereinafter "Tennis Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Tennis Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Boxing Player's Realistic Arm Movement Expressing Effect>>

Claim 30 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a boxing player. For example, when the computer generated boxing player is in his/her home

position, the computer generated boxing player bends his/her arm to protect him/herself. At this moment, the arm joint angle value indicates the 1st value, and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated boxing player bends his/her arm to protect him/herself as if a real boxing player bends his/her arm to protect him/herself in a real world.

When the computer generated boxing player counter attacks the opponent, the computer generated boxing player is in the motion to stretch his/her arm to hit the opponent. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated boxing player is in the motion to stretch his/her arm to hit the opponent as if a real boxing player is in the motion to stretch his/her arm to hit the opponent in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated boxing player is efficiently described in a realistic manner (hereinafter "Boxing Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Boxing Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is

unobvious and patentable under §103.

<<Karate Player's Realistic Arm Movement Expressing Effect>>

Claim 30 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a karate player. For example, when the computer generated karate player is in his/her home position, the computer generated karate player bends his/her arm to protect him/herself. At this moment, the arm joint angle value indicates the 1st value, and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated karate player bends his/her arm to protect him/herself as if a real karate player bends his/her arm to protect him/herself in a real world.

When the computer generated karate player counter attacks the opponent, the computer generated karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop as if a real karate player is in the motion to stretch his/her arm to provide the opponent a

karate-chop in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated karate player is efficiently described in a realistic manner (hereinafter "Karate Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Karate Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Basket Ball Player's Realistic Arm Movement Expressing Effect>>

Claim 30 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a basket ball player. For example, when the computer generated basket ball player is about to shoot the ball, the computer generated basket ball player bends his/her arm holding the ball. At this moment, the arm joint angle value indicates the 1st value, and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated basket ball player bends his/her arm holding the ball as if a real basket ball player bends his/her arm holding the ball in a real world.

When the computer generated basket ball player shoots the ball, the computer generated basket ball player is in the motion to stretch his/her arm to release the

ball toward the basket. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated basket ball player is in the motion to stretch his/her arm to release the ball toward the basket as if a real basket ball player is in the motion to stretch his/her arm to release the ball toward the basket in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated basket ball player is efficiently described in a realistic manner (hereinafter "Basket Ball Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Basket Ball Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Rifle Shooter's Realistic Arm Movement Expressing Effect>>

Claim 30 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a rifle shooter. For example, when the computer generated rifle shooter is holding the rifle to shoot a target, the computer generated rifle shooter bends his/her arm holding the rifle. At this moment, the arm joint angle value indicates the 2nd value, and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in

accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated rifle shooter bends his/her arm holding the rifle as if a real rifle shooter bends his/her arm holding the rifle in a real world.

When the computer generated rifle shooter pulls the trigger of the rifle, the arm of the computer generated rifle shooter is further bent due to the reaction (recoil) of the rifle. During this moment, the arm joint angle value indicates the 1st value, and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the arm of the computer generated rifle shooter is further bent due to the reaction (recoil) of the rifle as if the arm of a real rifle shooter is further bent due to the reaction (recoil) of the rifle in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated rifle shooter is efficiently described in a realistic manner (hereinafter "Rifle Shooter's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Rifle Shooter's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Driver's Realistic Arm Movement Expressing Effect>>

Claim 30 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a driver of an

automobile. For example, when the computer generated driver drives the automobile straight ahead, the computer generated driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel. At this moment, the arm joint angle value indicates the 1st value, and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel as if a real driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel in a real world.

When the computer generated driver turns the direction of the automobile, the arm of the computer generated driver is stretched while rotating the steering wheel. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the arm of the computer generated driver is stretched while rotating the steering wheel as if the arm of a real driver is stretched while rotating the steering wheel in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated driver is efficiently described in a realistic manner (hereinafter

"Driver's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Driver's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Object Picking Up Realistic Arm Movement Expressing Effect>>

Claim 30 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a human being picking up an object. Assuming that the computer generated human being placing his/her arm on his/her lap reaches out his/her arm to pick up an object (e.g., a coffee cup). When the arm of the computer generated human being is placed on his/her lap, the arm of the computer generated human being is bent. At this moment, the arm joint angle value indicates the 1st value, and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the arm of the computer generated human being is placed on his/her lap as if the arm of a real human being is placed on his/her lap in a real world.

When the computer generated human being is in the motion to pick up the object (e.g., a coffee cup), the arm of the computer generated human being is stretched. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the amount of wrinkle image displayed on or near the arm joint changes in

accordance with the arm joint angle value (the 2nd value), the viewer perceives that the arm of the computer generated human being is stretched to pick up the object (e.g., a coffee cup) as if the arm of a real human being is stretched to pick up the object (e.g., a coffee cup) in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated human being is efficiently described in a realistic manner (hereinafter "Object Picking Up Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Object Picking Up Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

Claim 31

Satisfying Requirement Of §102

<<Upper Arm, Lower Arm, And Arm Joint>>

Claim 31 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 31 recite the combination of the upper arm, the lower arm, and the arm joint generated by utilizing computer graphics.

Kalra and other cited prior arts, or any combination thereof, merely show the elements of finger and do not show the combination of the upper arm, the lower

arm, and the arm joint generated by utilizing computer graphics.

<<1st Amount Of Wrinkle Image>>

Claim 31 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 31 recite the 1st length of wrinkle image which indicates the image of the wrinkle of a certain length displayed on or near the arm joint and the 1st amount of wrinkle image displayed on or near the arm joint. Here, the 1st length of wrinkle image is displayed on or near the arm joint and the 1st amount of wrinkle image is displayed on or near the arm joint when the arm joint angle value indicates the 1st value.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the 1st length of wrinkle image displayed on or near the arm joint and the 1st amount of wrinkle image displayed on or near the arm joint when the arm joint angle value indicates the 1st value.

<<2nd Amount Of Wrinkle Image>>

Claim 31 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 31 recite the 2nd length of wrinkle image which indicates the image of the wrinkle shorter than the 1st length of wrinkle image displayed on or near said arm joint and the 2nd amount of wrinkle image displayed on or near the arm joint. Here, the 2nd length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint when the arm joint angle

value indicates the 2nd value.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the 2nd length of wrinkle image displayed on or near the arm joint and the 2nd amount of wrinkle image displayed on or near the arm joint when the arm joint angle value indicates the 2nd value.

<<Different Wrinkle Images And Different Amount Wrinkle Images In Accordance With Arm Joint Angle Value>>

Claim 31 clearly distinguishes applicant's invention from Kalra and other cited prior arts, or any combination thereof, since claim 31 recite the method of displaying different wrinkle images and different amount of wrinkle images in accordance with the arm joint angle value. Namely, when the arm joint angle value indicates the 1st value, the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle image (e.g., 3 wrinkles) is displayed on or near the arm joint. When the arm joint angle value indicates the 2nd value, the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image (e.g., 2 wrinkles) is displayed on or near the arm joint.

Kalra and other cited prior arts, or any combination thereof, merely show that wrinkle is displayed on finger and do not show the method of displaying different

wrinkle images and different amount of wrinkle images in accordance with the arm joint angle value.

Satisfying Requirement Of §103

Kalra and other cited prior arts, or any combination thereof, disclose the wrinke image described on finger joint, whereas the present invention implements the method of describing wrinkle on arm joint in a realistic manner.

<<Tennis Player's Realistic Arm Movement Expressing Effect>>

Claim 31 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a tennis player. For example, when the computer generated tennis player is waiting for the ball to be served, the computer generated tennis player slightly bends his/her arm holding the tennis racket. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated tennis player is holding the tennis racket wth his/her arm bent as if a real tennis player is holding a tennis racket with his/her arm bent in a real world.

When the ball is served and the computer generated tennis player is about to swing the tennis racket to hit the ball, the computer generated tennis player is in the motion to stretch his/her arm holding the tennis racket. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated tennis player is stretching his/her arm to hit the ball as if a real tennis player is stretching his/her arm to hit the ball in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated tennis player is efficiently described in a realistic manner (hereinafter "Tennis Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Tennis Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Boxing Player's Realistic Arm Movement Expressing Effect>>

Claim 31 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a boxing player. For example, when the computer generated boxing player is in his/her home position, the computer generated boxing player bends his/her arm to protect

him/herself. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated boxing player bends his/her arm to protect him/herself as if a real boxing player bends his/her arm to protect him/herself in a real world.

When the computer generated boxing player counter attacks the opponent, the computer generated boxing player is in the motion to stretch his/her arm to hit the opponent. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated boxing player is in the motion to stretch his/her arm to hit the opponent as if a real boxing player is in the motion to stretch his/her arm to hit the opponent in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated boxing player is efficiently described in a realistic manner (hereinafter

"Boxing Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Boxing Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Karate Player's Realistic Arm Movement Expressing Effect>>

Claim 31 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a karate player. For example, when the computer generated karate player is in his/her home position, the computer generated karate player bends his/her arm to protect him/herself. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated karate player bends his/her arm to protect him/herself as if a real karate player bends his/her arm to protect him/herself in a real world.

When the computer generated karate player counter attacks the opponent, the computer generated karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which

indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop as if a real karate player is in the motion to stretch his/her arm to provide the opponent a karate-chop in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated karate player is efficiently described in a realistic manner (hereinafter "Karate Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Karate Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Basket Ball Player's Realistic Arm Movement Expressing Effect>>

Claim 31 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a basket ball player. For example, when the computer generated basket ball player is about to shoot the ball, the computer generated basket ball player bends his/her arm holding the ball. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle

image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the computer generated basket ball player bends his/her arm holding the ball as if a real basket ball player bends his/her arm holding the ball in a real world.

When the computer generated basket ball player shoots the ball, the computer generated basket ball player is in the motion to stretch his/her arm to release the ball toward the basket. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated basket ball player is in the motion to stretch his/her arm to release the ball toward the basket as if a real basket ball player is in the motion to stretch his/her arm to release the ball toward the basket in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated basket ball player is efficiently described in a realistic manner (hereinafter "Basket Ball Player's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the

Basket Ball Player's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Rifle Shooter's Realistic Arm Movement Expressing Effect>>

Claim 31 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a rifle shooter. For example, when the computer generated rifle shooter is holding the rifle to shoot a target, the computer generated rifle shooter bends his/her arm holding the rifle. At this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the computer generated rifle shooter bends his/her arm holding the rifle as if a real rifle shooter bends his/her arm holding the rifle in a real world.

When the computer generated rifle shooter pulls the trigger of the rifle, the arm of the computer generated rifle shooter is further bent due to the reaction (recoil) of the rifle. During this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in

accordance with the arm joint angle value (the 1st value), the viewer perceives that the arm of the computer generated rifle shooter is further bent due to the reaction (recoil) of the rifle as if the arm of a real rifle shooter is further bent due to the reaction (recoil) of the rifle in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated rifle shooter is efficiently described in a realistic manner (hereinafter "Rifle Shooter's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Rifle Shooter's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Driver's Realistic Arm Movement Expressing Effect>>

Claim 31 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a driver of an automobile. For example, when the computer generated driver drives the automobile straight ahead, the computer generated driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives

that the computer generated driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel as if a real driver bends his/her arm to hold the steering wheel having his/her hand rested on the upper portion of the steering wheel in a real world.

When the computer generated driver turns the direction of the automobile, the arm of the computer generated driver is stretched while rotating the steering wheel. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer perceives that the arm of the computer generated driver is stretched while rotating the steering wheel as if the arm of a real driver is stretched while rotating the steering wheel in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated driver is efficiently described in a realistic manner (hereinafter "Driver's Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Driver's Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

<<Object Picking Up Realistic Arm Movement Expressing Effect>>

Claim 31 provides an efficient method to describe the movement of the arm of a computer generated human being in a realistic manner, such as a human being picking up an object. Assuming that the computer generated human being placing his/her arm on his/her lap reaches out his/her arm to pick up an object (e.g., a coffee cup). When the arm of the computer generated human being is placed on his/her lap, the arm of the computer generated human being is bent. At this moment, the arm joint angle value indicates the 1st value, and the 1st length of wrinkle image which indicates the image of wrinkle of a certain length is displayed on or near the arm joint and the 1st amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 1st value), the viewer perceives that the arm of the computer generated human being is placed on his/her lap as if the arm of a real human being is placed on his/her lap in a real world.

When the computer generated human being is in the motion to pick up the object (e.g., a coffee cup), the arm of the computer generated human being is stretched. During this moment, the arm joint angle value indicates the 2nd value, and the 2nd length of wrinkle image which indicates the image of wrinkle shorter than the 1st length of wrinkle image is displayed on or near the arm joint and the 2nd amount of wrinkle image is displayed on or near the arm joint. Since the wrinkle image and the amount of wrinkle image displayed on or near the arm joint changes in accordance with the arm joint angle value (the 2nd value), the viewer

perceives that the arm of the computer generated human being is stretched to pick up the object (e.g., a coffee cup) as if the arm of a real human being is stretched to pick up the object (e.g., a coffee cup) in a real world.

Thus, by way of utilizing the present invention, the arm movement of a computer generated human being is efficiently described in a realistic manner (hereinafter "Object Picking Up Realistic Arm Movement Expressing Effect"). Kalra and other cited prior arts, or any combination thereof, do not teach the Object Picking Up Realistic Arm Movement Expressing Effect, therefore, the present claim is unobvious and patentable under §103.

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Conclusion

For all of the above reasons, applicant submits that the claims all define patentably over the prior art. Therefore, applicant submits that this application is now in condition for allowance, which action applicant respectfully solicits.

Conditional Request Constructive Assistance

Applicant has amended the claims so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 2173.02 and § 707.07(j) in order that applicant can place this application in

allowable condition as soon as possible and without the need for further proceedings.

Applicant has no intent, by submitting this amendment, (1) to narrow the scope of any claim nor (2) to surrender any equivalent of any element included in the claims. No new matter is added by this amendment.